



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,074	02/03/2004	Joel F. Zuhars	137782 (MHM - 15221US01)	1973
23446 7590 06/09/2011 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661				
EXAMINER STREGE, JOHN B				
ART UNIT		PAPER NUMBER		
2624				
NOTIFICATION DATE		DELIVERY MODE		
06/09/2011		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mhmpto@mcandrews-ip.com

Office Action Summary

Application No.

10/771,074

Applicant(s)

ZUHARS ET AL.

Examiner

JOHN STREGE

Art Unit

2624

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/03/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-945)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 01/26/11
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

In view of the Appeal Brief filed on 03/28/11, PROSECUTION IS HEREBY REOPENED. A new rejection under USC 103 is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Bhavesh M Mehta/

Supervisory Patent Examiner, Art Unit 2624.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, and 5-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al (US 6,666,579) in view of Barth et al. US 2003/0052879 (hereinafter Barth, cited in the IDS).

Regarding claim 1, Barth discloses a method of performing instrument tracking on an image (col. 4 lines 10-15, paragraph bridging cols. 5-6) comprising: collecting in a collection device that rotatably moves a plurality of static 2D images using an image processing computer (col. 3 lines 45-60); computing on a tracking data processor at least one of a position and orientation of at least one instrument for said plurality of static images (paragraph bridging cols. 5-6, col. 7 lines 64-67, the position of the instrument may define six degrees of freedom such as x,y,z, coordinates and yaw angular orientations); and automatically displaying on an output device each image and projecting the position and orientation of the instrument onto each image (col. 10 lines 25-49).

Although Jenson discloses 3D rendering of the patient data with the instrument data superimposed, he does not explicitly disclose displaying the static 2D images in sequential image by image manner to create 3D information by creating motion through the animation process.

Barth discloses a method for reconstructing 3D image data with respect to a volume of interest of an examination subject. Specifically Barth discloses mixing volumes of interest into 2D central projections and successively viewing the 2D central projections with marks such as by scrolling or in the form of a cine replay in the fashion of a movie film (paragraph 0041, this reads on displaying the static 2D images in a

sequential image by image manner to create 3D information by creating motion through the animation process).

Jenson and Barth are analogous art because they are from the same field of endeavor of displaying 3D image data.

At the time of the invention it would have been obvious to one of ordinary skill in the art to use the scrolling of Barth in order to follow the instrument through the various images as specified by Jenson. The motivation would be to give the doctor a better idea of the location of the instrument during a medical procedure.

Regarding claim 2, the static images of Jenson comprise 2D flourosopic images (col. 3 lines 45-55).

Regarding claim 3, as discussed Barth discloses continuously presenting the image by image animation using a display.

Regarding claims 5-6, Jenson teaches calibrating at least one image of said collected plurality of static images such that said at least one position and orientation of said at least one image may be accurately displayed and selecting at least one calibrated image to be a current image (col. 10 lines 1-65).

Regarding claim 7, Jenson discloses computing at least one position and orientation for at least one instrument for the current image (col. 7 lines 64-67).

Regarding claims 8-9, Jenson discloses using a movable C-arm which is a moveable collection device (col. 7 lines 1-19).

Claim 10 is similarly analyzed to the above claims. Note that Barth discloses selects the volume of interest in each image, and it is displayed, and this is repeated for each image.

Claims 11-12 are similarly analyzed to claims 8-9.

Claim 13 is similarly analyzed to claim 2.

Claim 14 is similarly analyzed to claim 3.

Regarding claim 15, Jenson discloses projecting said at least one position and orientation of said at least one instrument into at least one image of said series of 2D static images (col. 10 lines 25-49).

Regarding claim 16, as discussed Barth discloses incrementing the current image (scrolling).

Regarding claim 17, the position and orientation of the instrument is calculated in each image (col. 4 lines 10-15).

Claims 18-19 are similarly analyzed to claims 1 and 9.

Regarding claim 20, the C-arm discloses a transmitter and detector device (col. 3 lines 1-26).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN STREGE whose telephone number is (571)272-7457. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/
Supervisory Patent Examiner, Art Unit 2624

/John B Strege/
Primary Examiner, Art Unit 2624